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Physics-Based Modeling In Design and Development For U.S. Defense

“Design Innovation to Improve DoD Acquisition”

Denver, CO

14 - 17 November 2011

Agenda

Monday, November 14, 2011

TUTORIAL SESSION

- 13261 - “Identification of M&S Uncertainty and Assessment of M&S Use Risk”, Ms. Simone Youngblood, Johns Hopkins University Applied Physics Laboratory

Tuesday, November 15, 2011

KEYNOTE SPEAKER

- Dr. Jeff Holland, Director, U.S. Army Engineer Research and Development Center
 1. MD Fiber Simulation (.wmv files)
 2. OHC Test (.wmv files)
 3. Sensor Movie (.wmv files)
 4. Y Section No Beam (.wmv files)

KEYNOTE SPEAKER

- Dr. Ed Kraft, Arnold Engineering Development Center, Arnold AFB

PLENARY SESSION

CREATE EXECUTIVE PANEL: OVERVIEW OF CREATE PRODUCTS: AV, SHIPS, RF, MESHING/GEOMETRY

Moderator: Dr. Douglass Post, DoD High Performance Computing Modernization Program

- Air Vehicles: Dr. Robert L. Meakin, CREATE-AV Project Manager, DoD High Performance Computing Modernization Program
- Ships: Mr. Myles Hurwitz, DoD High Performance Computing Modernization Program
- RF Antennas: Dr. John D’Angelo, Air Force Research Laboratory, Wright Patterson Air Force Base
- Meshing & Geometry: Dr. Saikat Dey, CREATE Meshing and Geometry Project Manager, Naval Research Laboratory
- Portal: Mr. David Morton, Director, AFRL Maui High Performance Computing Center DSRC

LUNCHEON SPEAKER

- RADM Thomas J. Eccles, USN, Chief Engineer and Deputy Commander for Naval Systems Engineering, Naval Sea Systems Command

USER EXECUTIVE PLENARY SESSION

Moderator: Mr. Loren Miller, Data Metric Innovations, LLC

- Mr. Robert Keane, President, Ship Design USA, Inc., former NAVSEA Chief Naval Architect
- Mr. John Dean, SEEKEAGLE, Eglin AFB
 1. MALD MSN2 (.mpeg)
 2. F22 WUT (.avi)
 3. CFD vs FT sideview (.avi)
 4. CFD vs FT frontview (.avi)
- Mr. Ray Cosner, Boeing Company
 1. Contours (.wmv file)

EXECUTIVE PLENARY SESSION

Moderator: Mr. Jim O’Bryon, President, The O’Bryon Group; Chair, NDIA T&E Division

- Dr. Ed Kraft, Arnold Engineering Development Center, Arnold AFB
- Dr. David Womble, Sandia National Laboratories

Wednesday, November 16, 2011

CONCURRENT SESSIONS

TRACK 1 - MESHES

- 13599 - “Interoperable Components for Parallel Mesh Generation and Adaptation”, Dr. Mark Shephard, Rensselaer Polytechnic Institute
- 13611 - “CUBIT and Real-World Applications”, Dr. Brett Clark, Sandia National Laboratories
- 13241 - “Multiphysics Modeling of Pre-ignition Damage in Energetic Materials and the Effect on Cookoff Violence”, Dr. Daniel Turner, Sandia National Laboratories

HYDRODYNAMICS AND AERODYNAMICS

- 13503 - “A Physics-Based Modeling of Surface Ship Fixed at Sinkage and Trim”, Dr. Bong Rhee, Naval Surface Warfare Center, Carderock Division
- 13378 - “CaMEL CFD Technologies For HPC”, Dr. Erdal Yilmaz, Assistant Professor, Northrop Grumman Center for HPC, Jackson State University

TRACK 2 - SE M&S PERSPECTIVES

- 13275 - “Moving From Empirically- Based Models to Physics-Based Models: An Incentive/Investment Strategy”, Mr. James O’Bryon, The O’Bryon Group
- 13418 - “Physics-Based Modeling: What We Can Do While We’re Waiting”, Dr. Robert Neches, ODASD-SE
- 13366 - “Baselining the State of Physics-Based Modeling Use in DoD Acquisition Organizations”, Mr. Frank Salvatore, High Performance Technologies

FIXED AND ROTARY WING AIRCRAFT

- 13274 - “CREATE-AV DaVinci: Model-Based Engineering for Systems Engineering Decision Making”, Mr. Gregory Roth, U.S. Air Force/ASC/XR
- 13271 - “Firebolt – The CREATE-AV Propulsion Integration Module”, Dr. Robert Nichols, Arnold Engineering Development Center / University of Alabama at Birmingham
- 13272 - “High-Performance Computing for Rotorcraft Modeling and Simulation, Dr. Roger Strawn, U.S. Army AMRDEC

TRACK 3 - MODEL DEPLOYMENT METHODS

- 13457 - “Portal Development for HPC at Maui High Performance Computing Center”, Mr. David Morton, Air Force Research Laboratory

TRACK 4 - HPC USE FOR DESIGN, DEVELOPMENT, AND TESTING

- 13211 - “The Use of Physics of Failure Tools for Reliability Improvement and Addressing Modularity Issues in Evaluation and Physical Testing”, Dr. Richard Heine, Army Materiel Systems Analysis Activity
- 13293 - “Computational Fluid Dynamics for Simulation Based Design: Challenges and Opportunities”, Dr. Pradeep Raj, Denmar Technical Services
- 13490 - “Application of High-Fidelity Computational Fluid Dynamics to Design Optimization for Missile Static Stability”, Dr. Gregory McGowan, Corvid Technologies
- 13444 - “Development of the CREATE Integrated Hydrodynamic Design Environment (IHDE)”, Mr. Bob Ames, Naval Surface Warfare Center, Carderock Division

Thursday, November 17, 2011

TRACK 8 - COST ANALYSIS AND SOFTWARE ENGINEERING

- 12946 - “Optimizing Data Driven Cost Estimating Models for Space Mission Analysis and Design”, Mr. Zachary Jasnoff, PRICE Systems

TRACK 9 - ELETRO-OPTIC AND RADIO FREQUENCY DEVICES

- 13308 - “Physics-Based Performance Analysis with High Fidelity, Dynamic, Real-Time EO Scene Generation”, Dr. Michael Rivera, Raytheon Missile Systems

TRACK 10 - FROM CONCEPT TO PRODUCTION

- 13234 - “Rapid Design and Integration (RDI)”, Mr. Adrian Mackenna, Naval Surface Warfare Center, Carderock Division

TRACK 11 - EXPLOSIVES AND COMBUSTION

- 13305 - “Physics-Based Modeling and Simulation of Shock-to-Detonation Transition in Energetic Materials”, Dr. Thomas Jackson, IllinoisRocstar

